Radio-Tracking of Stocked Adult Colorado Pikeminnow in the San Juan River
Fiscal Year 2003 Project Proposal
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Background:

Colorado pikeminnow is a federally-listed endangered fish native to the San Juan River. The capture of low numbers of Colorado pikeminnow of all life stages over the past ten years has confirmed that a small, but reproducing population of Colorado pikeminnow still exists in the San Juan. In 1996, experimental stocking of Colorado pikeminnow into the San Juan River was undertaken by the Utah Division of Wildlife Resources (UDWR). Between 1996 and 2000, approximately 827,000 larval and age-0 Colorado pikeminnow were stocked into the San Juan River by UDWR. In following years, several hundred experimentally stocked fish were recaptured during subsequent monitoring efforts. Based on data collected from experimentally stocked fish, it is apparent that stocked, hatchery-reared Colorado pikeminnow can survive in the San Juan River and can provide a viable method of supplementing the numbers and expanding the range of the wild San Juan River Colorado pikeminnow population.

On 11 April 2001, the U.S. Fish and Wildlife Service stocked 148 adult Colorado pikeminnow into the San Juan River at RM 178.8. These fish, which averaged 539 mm TL at time of stocking, were excess fish being culled from Upper Basin Recovery Program broodstock lots being held at Dexter National Fish Hatchery (NFH). Eight of these fish were implanted (in fall 2000) with four-year life-span radio transmitters. The purpose of this stocking was to determine the feasability of using stocked adult Colorado pikeminnow to expand the range of the San Juan River Colorado pikeminnow population into river sections upstream of the Hogback Diversion (RM 158.6). To this end, information will be collected, via radio telemetry and electrofishing recaptures, on survival, dispersal, movements, habitat use, and possible spawning behavior among stocked adult Colorado pikeminnow.

The need for artificial propagation and augmentation of Colorado pikeminnow in the San Juan River is apparent for several reasons. Augmentation will help increase population numbers, provide more individuals for research purposes (as in the case of this study), add genetic diversity to the existing gene pool, and provide a riverine refugia population that will, hopefully, at least remain stable until further research can identify factors limiting successful recruitment of this species in the San Juan River. The San Juan River Long Range Plan identifies the need to assess the feasibility of, and then implement the augmentation of Colorado pikeminnow. In 2002, a plan for augmenting this species in the San Juan River will be finalized to provide the necessary

guidance for augmentation efforts as well as directly fulfilling objective 5.3.8.2 of the San Juan River Long Range Plan. While this augmentation plan will be based predominately on stocking juvenile life stage Colorado pikeminnow, adult Colorado pikeminnow will also be stocked into the San Juan River as they become available to the SJRIP.

Objectives:

1.) Determine the feasability of using stocked adult Colorado pikeminnow to expand the range of the San Juan River Colorado pikeminnow population into river sections upstream of the Hogback Diversion (RM 158.6).

Task 1: Track stocked adult Colorado pikeminnow implanted with radio transmitters to determine survival, dispersal, movements, habitat use, and possible spawning behavior.

Methods:

Objective 1: Tracking trips will be conducted on a monthly basis from April to October. If spawning aggregations of Colorado pikeminnow are identified, trips will be done on a more frequent basis, concentrating on the groups of spawning fish. If fish are contacted in aggregations during suspected spawning seasons, they will be tracked for a minimum of one hour each. At the end of these contacts, all riverine habitats for 100 meters both up- and downstream of the most up- and downstream fish locations during the contact period will be mapped on hardcopies of aerial videography. All habitats utilized by the fish will be recorded as well as the amount of time spent in each particular habitat type. Once back from the field, relative percentages of habitats available and habitats used will be determined, so that habitat selection can be determined (as was done in previous radio telemetry studies performed on razorback sucker in the San Juan River). During hour-long radiotelemetry contacts, detailed habitat information on substrate, depth, cover, and velocity at the fish's most frequented location will also be recorded. Water quality parameters including dissolved oxygen, water temperature, conductivity, and pH will be measured at each contact location. At the end of a radio telemetry contact, attempts will be made to recapture radiotelemetered fish via trammel netting and/or electrofishing. Recapture efforts will be aimed at gaining data on age, growth, and sexual status as well as trying to recapture any other Colorado pikeminnow that might be aggregating with radiotelemetered fish. If spawning aggregations of adult Colorado pikeminnow are identified, crews from other research elements monitoring Colorado pikeminnow larval drift (i.e., Steven Platania) and habitat quality and quantity (i.e., Ron Bliesner and Vince Lamarra) will be notified.

FY-2003 is the third year of a four-year radio telemetry effort.

Products:

An interim progress report detailing the field activities performed in 2003 will be produced by 30 March 2004. A "draft final" of this report, incorporating all comments received will be completed by 1 June 2004. DBASE IV files containing information on recaptured and radio-tracked Colorado pikeminnow will be submitted to Keller-Bliesner Engineering for inclusion on

the San Juan River Recovery Implementation Program integrated database CD-ROM by 31 March 2004.

Fiscal Year 2003 Budget:

Personnel		
Objective (84 man days): radio-tracking		$17,900
Subtotal	$17,900	
Travel and Per Diem (32 days)		$ 6,900
Data Analysis and Reporting (20 days)		$ 4,250
Subtotal	$11,150	
Equipment and Supplies--i.e., fuel and maintenance, repair, replacement of:		
Field equipment: stocking truck, water pump, nets, PIT tag gear, rafts and jon boats, outboard motors, radio receivers, etc.***		$ 2,000
Total	$31,050	
Service Administrative Overhead (20.00%)		$ 6,210
GRAND TOTAL	$37,260	

*** The 'Equipment and Supplies' costs listed here represent the costs anticipated to be incurred by CRFP in FY-2003 for performing our own field work as well as providing equipment for other agencies (UDWR-Moab and USFWS-Albuquerque) with whom we are cooperating on approved SJRIP projects. Our total anticipated cost for 'Equipment and Supplies' in FY-2003 (i.e. $6,000) has been divided evenly and distributed across three CRFP workplans, of which this workplan is one.

Previous Years' Funding:

Fiscal Year 2001 (costs defrayed under other CRFP workplans)	$ 0
Fiscal Year 2002 (included costs for the stocking age-0 Colorado pikeminnow, now under a separate workplan)	$48,600

Estimated Outyear Funding (based on an annual 5% increase as agreed upon by the SJRIP Biology Committee at their 21 May 2002 meeting):

Fiscal Year 2004	$44,750